TEST REPORT: 7191025103-CHM12-09-LSM-CR1

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SUBJECT

Chemical Resistance Testing of "MAICA Compact Laminates"

CLIENT

Maica Laminates Sdn Bhd
5100, Lorong Mak Mandin 5,
Mak Mandin Industrial Estate,
13400 Butterworth
Penang,Malaysia

Attn: Mr. Kow Cheng Fung

SAMPLE SUBMISSION / TEST DATE

31 Oct & 22 Dec 2011 / 11 Nov 2011 - 13 Jan 2012

SAMPLE DESCRIPTION

3 sets of "MAICA Compact Laminates" were received

Sample Reference

Colour : Black
Code : Nacht
Size : 16 mm (H) x 100 mm (W) x 100 mm (L)
Qty : 106

Colour : White
Code : Schnee
Size : 16 mm (H) x 100 mm (W) x 100 mm (L)
Qty : 111

Colour : Grey
Code : Asche
Size : 16 mm (H) x 100 mm (W) x 100 mm (L)
Qty : 107

TÜV SÜD PSB

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3 Science Park Drive, #04-01/05
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METHOD OF TEST

BS EN 438-2:2005
High-pressure decorative laminates (HPL). Sheets based on thermosetting resins (usually called laminates).
Determination of properties
Clause 26: Resistance to Staining

The above chemical test was conducted in accordance with BS EN 438-2:2005. Small quantity of test chemical is applied on the surface of the laminates and is covered to restrict evaporation.

The test parameters are described as follows:
Temperature : 23 ± 2 °C
Duration : 24 hours

After the test, the surface is washed with distilled water and dried with a clean cloth before visual inspection and evaluation.

The evaluation of the effect on the surface is expressed in accordance with the following rating scale

Rating	Description
5	No Visible Change
4	Slight Change of gloss and / or colour only visible at certain viewing angles
3	Moderate marked change of gloss and / or colour
2	Marked change of gloss and / or colour
1	Surface distortion and / or blistering

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RESULTS

No	Group	%	Rating		
			Nacht Black	**Schnee** White	**Asche** Grey
	Acid				
1	Acetic Acid	98	5	5	5
2	Dichromate Acid	5	5	5	5
3	Chromic Acid	60	5	5	5
4	Formic Acid	90	5	5	5
5	Hydrochloric Acid	37	5	5	5
6	Hydrofluoric Acid	48	4	4	2
7	Nitric Acid	20	5	5	5
8	Nitric Acid	30	5	5	5
9	Nitric Acid	70	4	4	4
10	Phosphoric Acid	85	5	5	5
11	Sulphuric Acid	33	5	5	5
12	Sulphuric Acid	77	5	5	5
13	Sulphuric Acid	96	4	4	4
14	Sulphuric Acid 77% :Nitric Acid 70%	1:1	4	4	4
	Bases				
15	Ammonia Hydroxide	28	5	5	5
16	Sodium Hydroxide	10	5	5	5
17	Sodium Hydroxide	20	5	5	5
18	Sodium Hydroxide	40	5	5	5
19	Sodium Hydroxide flake	-	5	5	5
	Halogens				
20	Tincture of Iodine	-	4	2	2
	Salts				
21	Sodium Sulfide	saturated	5	5	5
22	Silver Nitrate	saturated	5	3	5
23	Zinc Chloride	saturated	5	5	5
	Organic Chemicals				
24	Amyl Acetate	-	5	5	5
25	Benzene	-	5	5	5
26	Cresol	-	5	5	5
27	Dimethylformamide	-	5	5	5
28	Formaldehyde	37	5	5	5
29	Furfural	-	4	3	3
30	Gasoline	-	5	5	5
31	Hydrogen Peroxide	30	5	5	5
32	Methyl Ethyl Ketone	-	5	5	5
33	Phenol	90	5	5	5
34	Xylene	-	5	5	5

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RESULTS (cont'd)

No	Group	%	Rating		
			Nacht Black	**Schnee** White	**Asche** Grey
	Solvents				
35	Acetone	-	5	5	5
36	Butyl Alcohol	-	5	5	5
37	Carban Tetrachloride	-	5	5	5
38	Chloroform	-	5	5	5
39	Dichloro Acetic Acid	-	5	5	5
40	Diethyl Ether	-	5	5	5
41	Dioxane	-	5	5	5
42	Ethyl Alcohol	-	5	5	5
43	Ethyl Acetate	-	5	5	5
44	Methyl Alcohol	-	5	5	5
45	Methylene Chloride	-	5	5	5
46	Mono Chlorobenzene	-	5	5	5
47	Naphthalene	-	5	5	5
48	Toluene	-	5	5	5
49	Trichloroethylene	-	5	5	5

Remarks

The chemical mention in the table include chemicals/concentrations listed by SEFA 8 (Scientific Equipment and Furniture Association)

LEOW SIONG MING
TECHNICAL EXECUTIVE

for DR LI SIHAI
AVP / SENIOR CHEMIST
COATINGS & INDUSTRIAL CHEMICALS
CHEMICAL & MATERIALS

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July 2011